

MICHIGAN. Grand Rapids, *Miss Cole*, June 8, 1892 (K. M.); Harsen's Island, St. Clair County, *Dodge*, July 18, 1911 (K. M.); Port Huron, St. Clair County, *Dodge*, July 17, 1911 (K. M.).

INDIANA. Grass Lake, Steuben Co., *Deam* 1202, July 22, 1906 (N. Y. & K. M.); Wolf Lake, *Mrs. Chase* 1396, July 26, 1900 (K. M.).

WISCONSIN. Milwaukee, *Hasse*, June 25, 1882 (N. Y.).

ADDITIONS TO THE PLEISTOCENE FLORA OF THE SOUTHERN STATES*

BY EDWARD WILBER BERRY

During the last few years I have collected or received for identification several small collections of fossil plants from various localities and horizons in the Pleistocene of North Carolina, Alabama and Mississippi, and since these should be a matter of published record for the benefit of botanists and others interested in the question of the former distribution of existing species, the following brief compilation has been made.

NORTH CAROLINA

The first of these collections is from North Carolina. A most interesting deposit containing fossil plants was discovered in 1906 on the right bank of the Neuse River about four and one-half miles above Seven Springs in Wayne County. The section shows at its base a tough blue clay interstratified with layers of leaves, fruits, wood, and other vegetable débris, overlain by sand and gravel, and exposed in the recent cutting of the river.† The manner of occurrence indicates that at the time of deposition the locality was at the head of a Pleistocene estuary, the plant material accumulating exactly as it is at the present time along the coastal plain rivers. The collection from this locality was of such exceptional interest that a short account of it was published in 1907.‡ Thirty-eight species were listed, the locality

* Published with the permission of the Director of the U. S. Geological Survey.

† The deposits are referred to the Chowan formation by Stephenson, N. C. Geol. Surv. 3: 285. 1913.

‡ Berry, E. W., Journ. Geol. 15: 338-349. 1907.

being referred to as Station 850. There remained a mass of fragmentary leaves and seeds. Some of the best preserved of the latter were subsequently submitted to the U. S. Biological Survey and were determined by Mr. W. L. McAtee. The large collection of recent fruits and seeds gathered together by the Biological Survey and the long experience of Mr. McAtee, in identifying the comparable remains found during extensive studies of the stomach contents of birds, renders these identifications particularly authoritative. Following are the additions to this late Pleistocene flora:

1. *Chaetochloa* sp. A caryopsis of a grass of the genus *Chaetochloa* Scribner.

2. *Sparganium* sp. A nutlet of a bur-reed, specifically undeterminable.

3. *Populus* cf. *deltoides* Marsh. The deposits contain abundant bud-scales greatly resembling and probably those of this species, the leaves of which have been found in Pleistocene deposits of very similar age in Alabama.

4. *Polygonum* sp. An achene of an undetermined species of the genus *Polygonum* L.

5. *Viburnum* cf. *molle* Michaux. Two stones, probably representing this species, which is still found in this area. The present range of the species is from Massachusetts to Florida near the coast.

6. *Viburnum* cf. *nudum* L. Two stones, probably representing this species, whose present range is from Long Island to Florida.

7. An achene of a species of Compositae resembling those of the genus *Centaurea* L.

8. A single seeded dry drupe suggesting the family Oleaceae.

FLORIDA

In the vicinity of Milton, Santa Rosa County, Florida, there is a buried swamp deposit of late Pleistocene age containing trunks of a species of *Pinus*; and stumps, roots, and seeds of *Taxodium distichum*, as well as undeterminable fragments of dicotyledonous leaves.*

* This deposit is mentioned in Harper, R. M., Peat deposits of Florida. pp. 295-297, 1910, and without any warrant is referred to the so-called Grand Gulf formation.

ALABAMA

A few miles below Columbus, Georgia, along the west bank of the Chattahoochee River in Russell County and in the vicinity of Abercrombie Landing, the late Pleistocene terrace contains considerable deposits of impure peat which in places carries identifiable plant remains. A collection made here in 1907 by L. W. Stephenson was described by me that same year and twelve species were recorded.* I made additional collections in 1909 and subsequently recorded four additional species.†

In a recent review of this material characteristic seeds of *Phytolacca decandra* L. were recognized, but since care was not taken to exclude recent seeds in the collecting of large specimens containing leaves, it is possible that this is a recent seed, although it has the appearance of being fossil and not recent. In addition to the foregoing the stones of an undetermined species of *Rubus* were identified from this locality.

During 1913 Dr. C. W. Cooke of the U. S. Geological Survey made a collection of leaves from a grey argillaceous sand exposed about three miles west of Monroeville, Monroe County. The elevation is about 470 feet and the material is of a sort which is characteristic of what has hitherto been called Lafayette formation in this region. The collection, while not large, contains the following forms:

| | |
|-------------------------------------|--------------------------------------|
| <i>Arundinaria</i> sp. (probably | <i>Quercus virginiana</i> Miller |
| <i>macrosperma</i> Michx.) | <i>Platanus</i> sp. (probably occi- |
| <i>Hicoria aquatica</i> (Michx. f.) | <i>dentalis</i> L.) |
| Britton | <i>Persea pubescens</i> (Pursh) Sar- |
| <i>Quercus phellos</i> L. | gent |

These six forms are all still existing and all of them have previously been recorded from the Pleistocene of the southern coastal plain so that I have no hesitation in asserting that the deposits are of Pleistocene age.

MISSISSIPPI

In 1910 I collected the following plants from a clay-lens in the Pleistocene terrace materials exposed along the Chickasawhay

* Berry, E. W., Amer. Nat. 41: 689-697. pl. 1-2. 1907.

† Berry, E. W., Amer. Jour. Sci. iv. 29: 387-398. 1910.

River, one and one-half miles above Chicoria in Wayne County:

Taxodium distichum (L.) L. C. *Betula nigra* L. (leaves)
 Rich. (cone) *Quercus phellos* L. (leaves)

About ten or twelve miles up the river from this locality, C. W. Cooke made a small collection of fossil leaves in 1913. The locality is on the Chickasawhay River four miles northwest of Waynesboro in Wayne County. This collection contains identifiable leaves of the following species:

Hicoria aquatica (Michx. f.) *Quercus predigitata* Berry
 Britton *Fagus americana* Sweet

Quercus phellos L.

All of these are forms that are of widespread occurrence in the late Pleistocene of southeastern North America.

JOHNS HOPKINS UNIVERSITY,
 BALTIMORE, MD.

SHORTER NOTES

OCCURRENCE OF INDIAN PIPE.—The article of Mr. Edwin D. Hull in the June number of *TORREYA* on the "Occurrence of the Indian Pipe (*Monotropa uniflora*) in a Xerophytic Habitat" reminds me that in 1911 the plant was fairly abundant in a swamp of mingled black spruce and tamarack, the former predominating, in northwestern Wisconsin (Gaslyn, Burnett County). The individuals were somewhat dwarfed and blackened and were mostly concealed by the Sphagnum. They were in flower about the first of August. I had not visited the locality before nor have I since, but it impressed me as being a permanent habitat of these plants which I do not recall having seen elsewhere in the vicinity.

J. J. DAVIS

"MODERN" BOTANY IN 1821

"IV. Curiosa

"Alte Zeit und neue Zeit.

"FRAGER: Was ist Botanik?

"LINNAEUS: Est scientia naturalis, quae vegetabilium cognitionem tradit. (Philos. bot. I. 1750.)